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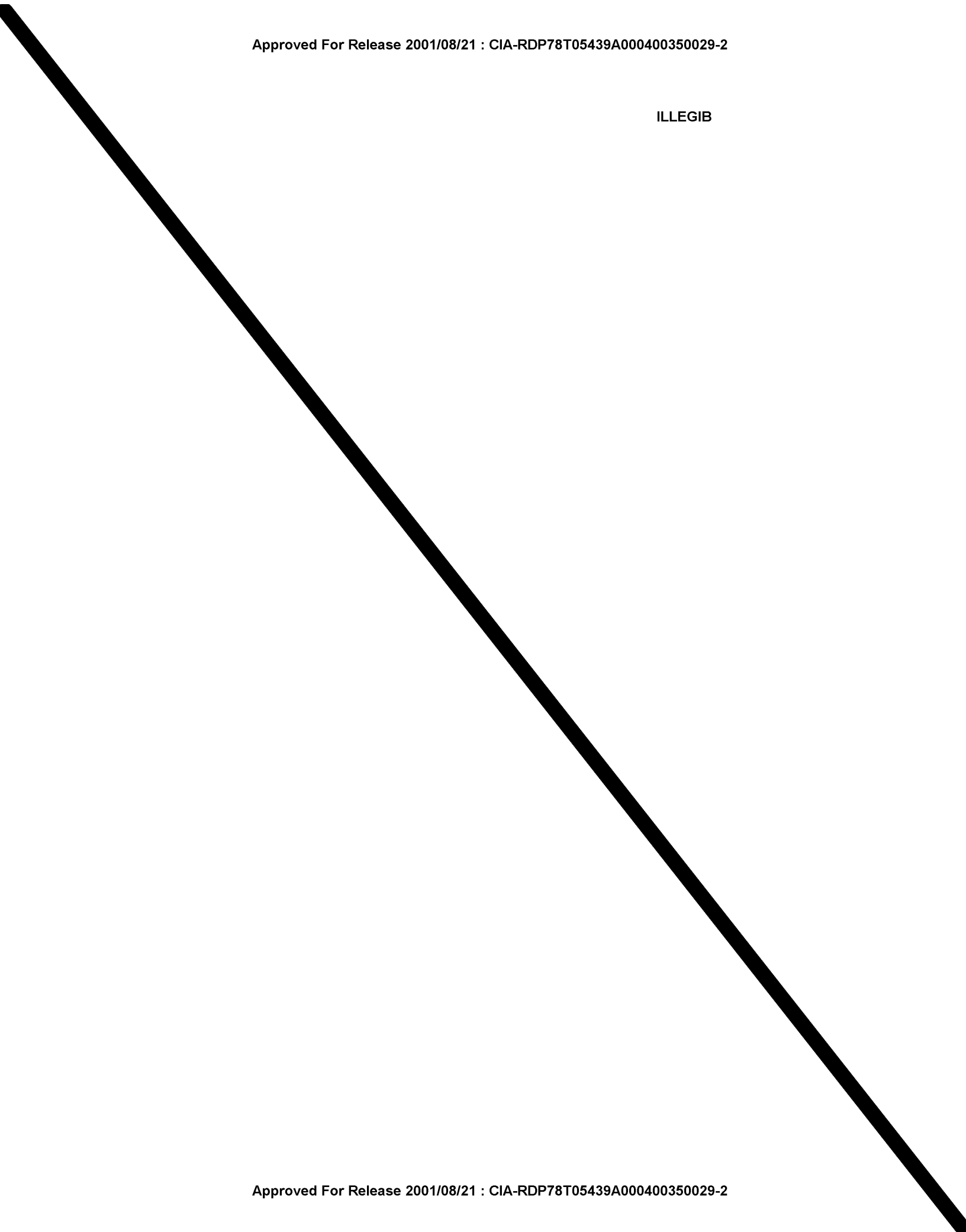

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TCS-80157/65
February 1965

PHOTOGRAPHIC INTERPRETATION REPORT

CHEMICAL FERTILIZER PLANT
TAI-YUAN, CHINA

CIA

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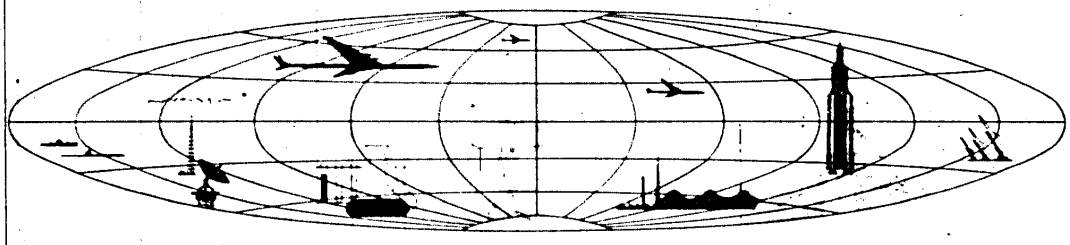

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CHEMICAL FERTILIZER PLANT, TAI-YUAN, CHINA

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SUMMARY

[redacted]

INTRODUCTION

The Tai-yuan Chemical Fertilizer Plant [redacted] is situated approximately 7.5 nautical miles (nm) southwest of the center of Tai-yuan in Shan-hsi Sheng (Shansi Province), China, at 37-46N 112-27E (figure 1). The plant has been reported as Chemical Plant No 202. 1/ It is part of the Tai-yuan Chemical Combine which was constructed with Soviet aid between [redacted] 2/ Other

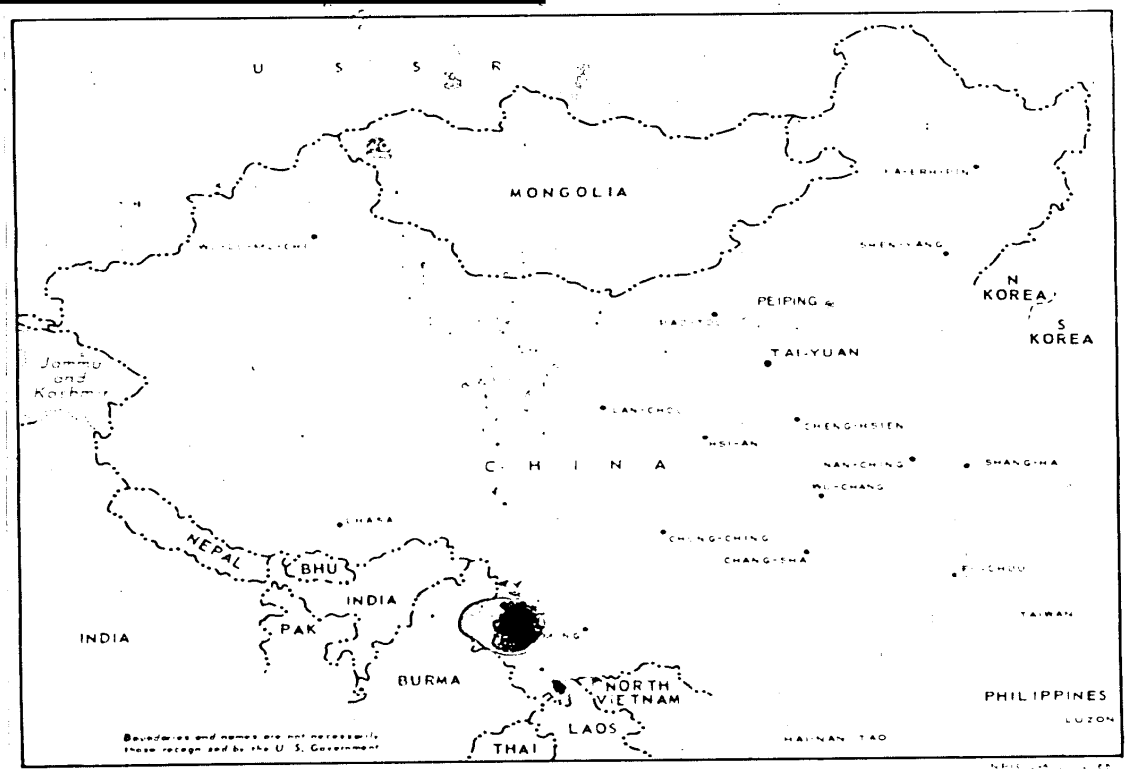

FIGURE 1. LOCATION MAP

FIGURE 2. TAI-YUAN CHEMICAL COMBINE, [redacted]

25X1D

components of the combine include the Tai-yuan Chemical Plant [redacted] approximately 1.5 nm to the north-northeast and the Tai-yuan Phosphate Fertilizer Plant (BI [redacted] about 3 nm to the north-northeast (Figure 2). The Tai-yuan Heat and Powerplant [redacted] immediately northeast of the Chemical Fertilizer Plant supplies steam and electricity to the chemical combine. The 4 plants and several smaller plants and factories are clustered near a large artificial lake which provides them with a continuous water supply. Ponds for waste products are nearby. Coal and probably pyrites are mined in the mountains west of the combine. 2/ An elaborate rail network facilitates the shipment of raw materials, chemical intermediaries, and byproducts to the various components of the combine and affords direct access to main rail lines needed for wide distribution of the final fertilizer products.

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CHRONOLOGY OF PLANT CONSTRUCTION

When first observed in [redacted] the Tai-yuan Chemical Fertilizer Plant was in the early stages of construction and did not appear to be operational. By [redacted] the principal structures had been completed, and the basic components for fertilizer production were probably operational; the perimeter wall had not been completed, and secondary production buildings were still under construction. [redacted] photography is the best available photography of the plant despite the fact that smoke from the powerplant obscured some of the production buildings in the northern part of the plant (Figure 3). At that time several production buildings had been added, and additional construction was visible in the southern part of the plant. During [redacted] construction continued, and additional piles of raw materials were discernible. [redacted] the perimeter wall had been completed; most of the temporary construction buildings had been removed; and only a few areas were under construction, an indication that the plant was nearing completion. Components of the plant are described in Table 1, and item numbers in the table are keyed to Figure 4.

DESCRIPTION OF PLANT

The Tai-yuan Chemical Fertilizer Plant covers approximately 405 acres and is approximately 9,000 feet long and 4,000 feet wide. It is secured by a wall, and most of the larger production buildings are rail served. The plant reportedly produces several kinds of nitrogenous fertilizers, methanol, formaldehyde, and high-grade liquid fuel. 3/ 4/ Sections for the production of ammonia, nitric acid, and ammonium nitrate have been identified (Figure 4). Although specific production buildings have not been identified, probable ammonium sulfate and urea production areas and a probable liquid storage or treatment area have been observed in the southern part of the plant, and a probable methanol production area was observed in the northwestern part of the plant. The plant also contains a number of other production-type buildings, but the products associated with these buildings cannot be determined. The complexity of interconnecting overhead steamlines and pipelines indicates that the plant is well integrated and fully utilizes its facilities for not only the production of fertilizer but also for the production of related chemical products and chemical intermediaries such as urea, nitric acid, methanol, and other coal tar derivatives. Some of the related chemical products are probably shipped to nearby plants for final processing

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FIGURE 3. TAI-YUAN CHEMICAL FERTILIZER PLANT

or for use in other products. There is no [redacted]

AMMONIA PRODUCTION SECTION

In this section ammonia is produced from coal which is coked and converted into hydrogen and nitrogen in the retort building and gas ovens (item 6). After being processed in the saturating towers (item 7), the catalyst building (item 8), and the purification towers (item 9), the gases are compressed and synthesized into ammonia liquor, which may also be further purified in this section. Some of the ammonia is shipped to other parts of the chemical combine, some may be used as liquid fertilizer, and the remainder is used to produce ammonium nitrate and possibly ammonium sulfate.

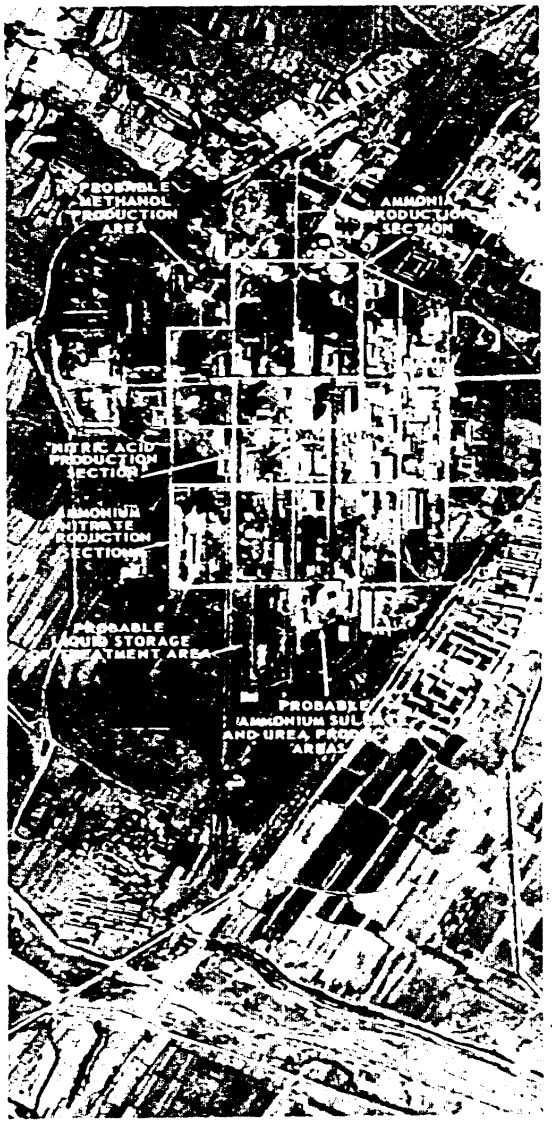
NITRIC ACID AND AMMONIUM NITRATE PRODUCTION SECTIONS

The Nitric Acid Production Section is situated approximately in the center of the plant and contains a nitric acid production building (item 18) and 4 adjacent absorption towers. Some nitric acid is probably piped to a final processing and storage building (item 37) and then transferred to other components in the combine. Some nitric acid is also piped to 4 probable nitric acid storage tanks (item 28) and is used in producing ammonium nitrate fertilizer. A flare tower (item 19) exhausts the waste gases.

The Ammonium Nitrate Production Section in the southwestern part of the plant consists of an ammonium nitrate production building (item 27) which contains neutralization towers where ammonia vapor and nitric acid are reacted to form an ammonium nitrate solution. The solution is conveyed to 2 nearby prilling towers (item 26) where it is converted to small solid particles. The fertilizer is then dried, screened, bagged, and temporarily stored in a rail-served ammonium nitrate storage building (item 35).

PRODUCTION OF RELATED PRODUCTS

Methanol and formaldehyde may be produced in facilities situated northwest of the Ammonia Production Section and near the retort building and gas ovens (item 6). A pipeline extends from the retort building to several nearby production buildings in this area. The probable liquid storage or treatment area in the southern part of the plant contains 4 buried tanks (item 43) and a possible liquid treatment and/or shipping building (item 44). [redacted] several railway tank cars were standing on the rail siding which serves this building (Figure 3). Several production buildings which are probably used for the production and shipment of ammonium sulfate and urea are located immediately northeast of the Probable Liquid Storage or Treatment Area. A suspect electrolysis building (item 34), a possible air liquification building (item 30), several production buildings, and a number of production-type buildings were observed in the eastern and central portions of the plant. The northernmost part of the plant contains many small storage and support buildings.



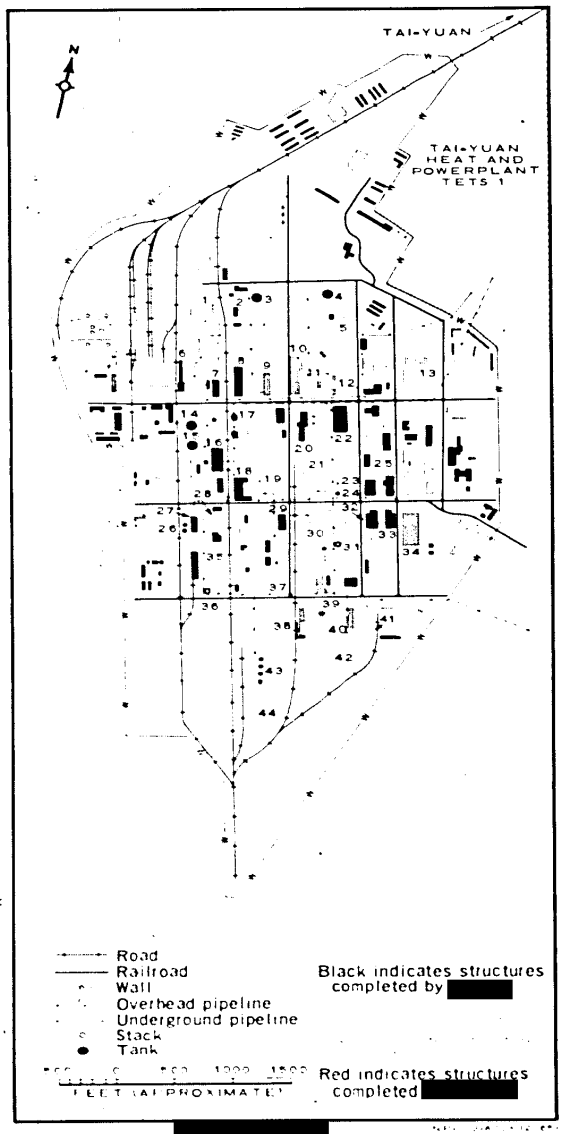


FIGURE 4. TAI-YUAN CHEMICAL FERTILIZER PLANT [redacted]

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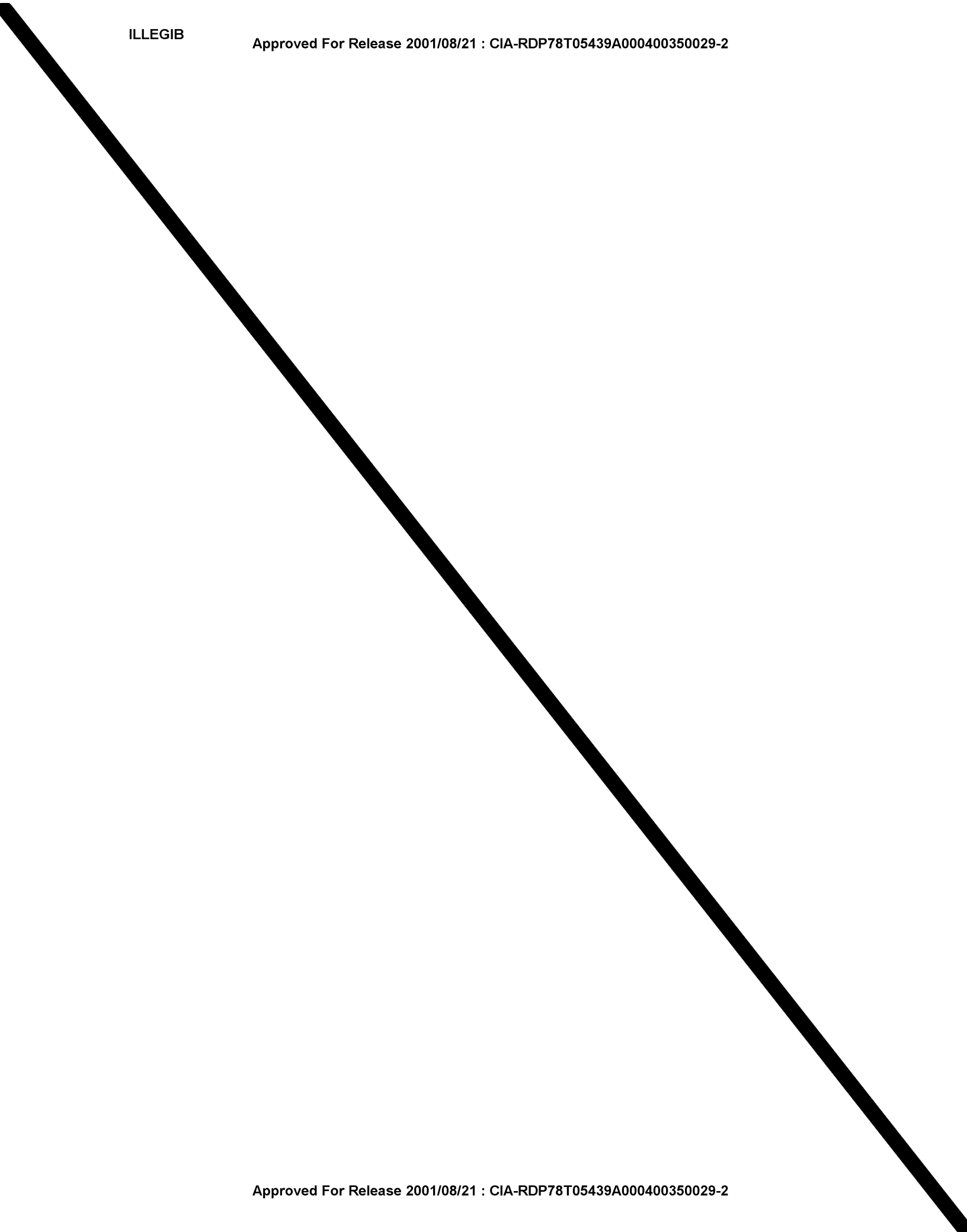

Approved For Release 2001/08/21 : CIA-RDP78T05439A000400350029-2

REFERENCES

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MAPS OR CHARTS

25X1C

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RELATED DOCUMENTS

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REQUIREMENT

25X9

[redacted]

NPIC PROJECT

[illegible]/64 (partial answer)